



SCP-ASXHA Switch Control Processor Release Notes

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1.0 Purpose of Release Notes

These release notes highlight the features and operational concerns of the SCP-ASXHA switch control processor (SCP).

2.0 Supported Operating Systems, Architectures, Hardware

- The SCP-ASXHA is supported in the ASX-200WG, ASX-200BX, ASX-1000, TNX-210, and TNX-1100 ATM switches.
- 4MB SCP-ASXHAs require the use of *ForeThought* 4.1.x or greater.
- The ability to recognize dissimilar SCPs is a *ForeThought* 5.3.x feature that has been recently patched into the following older releases of dual SCP capable switch software: *ForeThought* 4.1.x, *ForeThought* 5.1.x, and *ForeThought* 5.2.x. See Section 4.3 in these Release Notes for more information about dissimilar SCPs. Any attempt to operate dissimilar SCP-ASXHAs in a dual SCP configuration with a version of software that does not contain this patch will result in a switch panic or other form of non-recoverable error. Please contact the FORE Systems Technical Assistance Center (TAC) if you need to obtain one of these patch builds.

3.0 List of Features in the Product

- i960 HA 40MHz processor
- 40MHz local bus
- Supports 16MB or 32MB DRAM configurations
- 8MB of FLASH



Older revisions of the SCP-ASXHA had 4MB of FLASH.

4.0 Special Information

The following sections describe how to install and replace an SCP-ASXHA. Please see Section 4.3 in this document for instructions about how to upgrade SCP-ASXHAs when using a dual SCP configuration.

4.1 Installing a New SCP-ASXHA

You must back up your configuration database (CDB) before installing a new SCP-ASXHA in your switch. Once the SCP-ASXHA has been installed, you must retrieve the CDB and download it to the new SCP. Follow the procedure below:

CAUTION



Failure to backup and restore your CDB can result in lost configuration data.

4.1.1 Backing Up the Database

These commands let the user make a backup of the CDB. If you have configured the transfer protocol to be FTP using **conf system protocol**, you only need to enter the command **oper cdb backup** to perform the CDB backup. After you enter this command, you are prompted for the remote userid and password of the remote host to which you are backing up the file.

If you have configured the transfer protocol to be TFTP (this is the default) using **conf system protocol**, the remote host to which the file will be backed up must be running the TFTP daemon or server. If you are unsure of how to do this, see the ATM Switch Installation and Maintenance Manual for your switch.

If you are using TFTP to perform the CDB backup, you must first create an empty file in the `/tftpboot` directory on the remote host to receive the CDB. Use the **touch** UNIX command to do this. Then, use the **chmod** command to change the permissions of that file so that it will let the switch write the backup CDB to that file.

Perform the following steps to back up your CDB:

1. Telnet to your remote host and log in.
2. Enter the following commands in sequence:

```
cd /tftpboot
touch <backup file name>
chmod 777 <backup file name>
```

3. Exit from the telnet session.
4. Telnet to the switch and log into the ATM Management Interface (AMI).
5. Enter the following command at the prompt:

```
operation cdb backup <host>:<backup file name>
```

You should receive the following message:

```
CDB backup was successful
```

If you received this message, your backup file now resides in the file and on the host you specified.

4.1.2 Removing an SCP

The SCP-ASXHA can be removed from a switch fabric without turning off the power. The following procedure explains how to remove an HA-based SCP from a switch fabric.

WARNING!



It is highly recommended that you use a grounding strap when handling this or any other component.

CAUTION



Do not attempt to remove or replace an SCP without first removing all connections to the SCP (i.e., serial or Ethernet connections).

1. Loosen the captive fasteners on either edge of the SCP using a straight blade screwdriver.
2. Pull firmly and carefully on the two captive fasteners, removing the SCP from the switch fabric as shown in Figure 1.

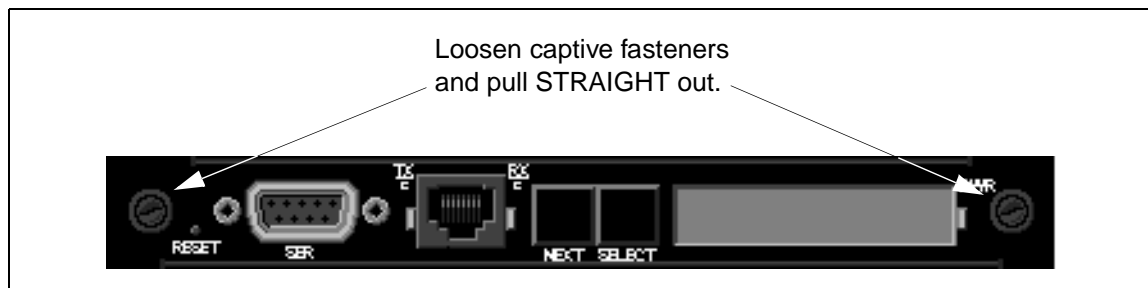


Figure 1 - Removal of an SCP

3. Place the SCP in an electro-static bag.

4.1.3 Installing an SCP

The SCP-ASXHA can be inserted in a switch fabric without turning off the power. The following procedure explains how to install an HA-based SCP into a switch fabric.

CAUTION



During step 1, take care to properly align the SCP in the card guides in the chassis.

1. Insert the new SCP into the switch fabric by sliding it into the card guides.
2. Push firmly to seat the SCP so its faceplate is flush with the front panel of the switch board.
3. Re-tighten the captive fasteners with a straight blade screwdriver to ensure the SCP is secure.

Once the SCP has been installed and the switch boots successfully, you can move on to Section 4.1.4 and restore the configuration database (CDB).

4.1.4 Restoring the Database

To restore the CDB, you must connect a terminal to the SCP-ASXHA's serial port and open a session in AMI. After logging in, you must configure the appropriate interface(s) that will allow you to connect to the remote host to which you backed up the CDB. For more information about configuring interfaces on the switch, see Section 2.7, "Configuring IP Addresses," in the ATM Switch Installation and Maintenance Manual for your switch.

Once you have configured the proper interfaces to allow a connection to the remote host, enter the following parameters at the prompt:

```
operation cdb restore <host>:<backup file name>
```

You will be prompted to verify this command, because the switch will be rebooted once the CDB has been restored. Type **y** and press **<ENTER>** at the prompt.

Once the switch reboots, any PVCs that had been configured will be re-established provided that none of the network modules were replaced after the CDB was backed up and provided that all of these steps have been performed properly.



If you have any questions about the above procedures, contact FORE Systems' Technical Assistance Center (TAC) (see Section 5.0).

4.2 Ferrite Cable Installation

Each SCP-ASXHA is supplied with a ferrite cable, which must be attached to an Ethernet cable before inserting it into the Ethernet port on the SCP. The ferrite cable acts as an electromagnetic interference (EMI) shield. This protective shield is necessary to block radio frequency interference (RFI) signals emitted from the ATM switch.

This section provides the instructions necessary to install the ferrite cable.

4.2.1 Required Hardware

Before you begin, make sure you have one ferrite cable (included with the SCP shipment) for each SCP-ASXHA Switch Control Processor. If you do not, see Section 5.0 of these Release Notes for information about contacting FORE Systems' TAC.

4.2.2 Installing the Ferrite Cable

Perform the following steps to ensure proper installation of the ferrite cable:

1. Ensure that the SCP has been inserted properly into your FORE Systems ATM switch.
2. Insert your Ethernet cable (RJ-45 male connector) into the box-shaped assembly (RJ-45 female connector) at the end of the ferrite cable as shown in Figure 2.

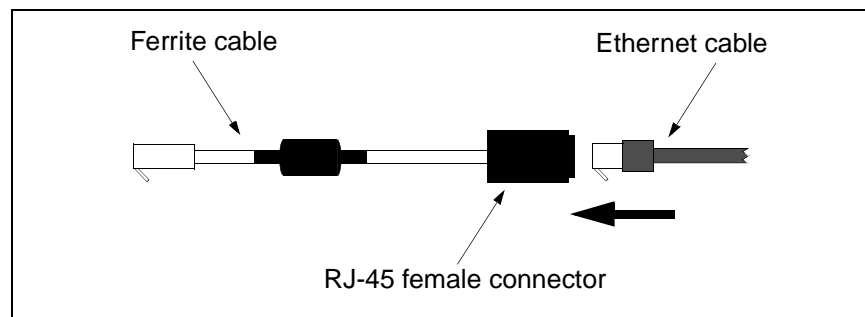


Figure 2 - Inserting a Ferrite Cable

3. Insert the connector end of the attached ferrite cable into the Ethernet port on the SCP just as you would a normal Ethernet cable.

4.3 Dual SCP Configuration

SCP failover support is available when two similar SCPs are installed in a single switch fabric. For more information about configuring dual SCPs via AMI, see the documentation that came with your FORE Systems ATM switch.

When using dual SCP configuration, you must either use two i960-based HA SCPs or two Pentium-based SCPs in the same fabric. Do not use one of each. However, you can have two i960-based HA SCPs in one fabric of an ASX-1000 or TNX-1100 and two Pentium-based SCPs in another fabric.

WARNING!



The i960-based HA and the Pentium-based SCP are hot-swappable ONLY if replacing the SCP with the same type (HA to HA or Pentium to Pentium).

Both HA SCPs must have the same FLASH size (both 4MB or both 8MB) and the same DRAM size (both 16MB or both 32MB). Otherwise, failover cannot occur.



Only HA SCPs or Pentium-based SCPs support the dual SCP configuration. Using an earlier version SCP in a redundant configuration can cause irreparable damage to the SCP or switch fabric.

4.3.1 Dual SCP Overview

Dual SCP failover and automatic CDB synchronization does not occur when dissimilar SCPs are used together in a switch fabric. Dissimilar SCPs are those that are different types (e.g., HA or P5), or those that have different FLASH sizes or DRAM sizes. If dissimilar SCPs are installed in the same switch fabric, the controlling SCP instructs the standby SCP not to take over the switch if the controlling SCP fails. The standby SCP does not even take over the switch when the controlling SCP is removed. Instead, the standby SCP with failover disabled displays the string `*DSABLE*` on the front panel LED.



The ability to recognize dissimilar SCPs is a feature that has been recently patched into older releases of dual SCP capable switch software. Please see Section 2.0 of this document for a list of those releases.

4.3.2 Upgrading with Dual SCPs

To upgrade from two 4MB SCP-ASXHAs to two 8MB SCP-ASXHAs in a dual SCP configuration, perform the following steps.

1. Back up the controlling SCP's CDB using the instructions in Section 4.1.1 of this document.
2. If you want to use the release of *ForeThought* software that is already installed on your 8MB SCPs, then skip to step 3. If you want to continue to use one of the older releases of *ForeThought* software that is listed in Section 2.0; e.g., *ForeThought* 5.1, you need to upgrade the controlling (4MB) SCP to the specific patch build for that release. Contact the FORE Systems TAC (see Section 5.0) to obtain the patch build.
3. Remove the standby (4MB) SCP using the instructions in Section 4.1.2 of this document.
4. Insert the new 8MB SCP into the fabric using the instructions in Section 4.1.3 of this document. If, in step 2, you upgraded to a specific patch build, the new processor will display `*DSABLE*` on the front panel LED. If you did not upgrade, you will receive an error message about the dissimilar SCPs on the console instead of receiving the front panel message.
5. On the controlling (4MB) SCP, manually synchronize the CDB and any other files that need to be synchronized using `conf system dualscp synchronize`.



If, in step 2, you used the release of *ForeThought* software that is already installed, then do not synchronize the OS at this point because you do not want to use the old OS. If, in step 2, you upgraded to a specific patch build, then synchronize the OS at this point.

6. Switch over to the standby (8MB) SCP using `conf system dualscp switchover`.
7. Remove the old 4MB SCP from the fabric using the instructions in Section 4.1.2 of this document.
8. Insert the other 8MB SCP in its place using the instructions in Section 4.1.3 of this document.
9. Restore the CDB to the (8MB) controlling SCP using the instructions in Section 4.1.4 of this document.
10. On the controlling (8MB) SCP, manually synchronize the CDB and any other files that need to be synchronized using `conf system dualscp synchronize`.

5.0 Contacting Technical Support

In the U.S.A., customers can reach FORE Systems' Technical Assistance Center (TAC) using any one of the following methods:

1. Select the "Support" link from FORE's World Wide Web page:

<http://www.fore.com/>

2. Send questions, via e-mail, to:

support@fore.com

3. Telephone questions to "support" at:

800-671-FORE (3673) or 724-742-6999

4. FAX questions to "support" at:

724-742-7900

Technical support for customers outside the United States should be handled through the local distributor or via telephone at the following number:

+1 724-742-6999

No matter which method is used to reach FORE Support, customers should be ready to provide the following:

- A support contract ID number
- The serial number of each product in question
- All relevant information describing the problem or question